



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,468	05/23/2001	Bernt Karlsson	34646-00451USPT	1742
27045	7590	04/01/2004	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			NGUYEN, JOSEPH D	
			ART UNIT	PAPER NUMBER
			2683	9

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,468

Applicant(s)

KARLSSON ET AL.

Examiner

Joseph D Nguyen

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 4 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (5,970,144) in view of Fox (5,765,172).

Regarding claim 1, Chan et al. discloses a method in a second mobile services switching center for updating location information of a mobile station when said mobile station has moved from an area controlled by a first mobile services switching center to an area controlled by a second mobile services switching center (fig. 1-3, col. 5 line 54 thru col. 6 line 33), said method comprising:

a) adding information relating to said mobile station to a second mobile services switching center database in response to said mobile station registering with said second mobile services switching center (fig. 1-3, col. 12 lines 32- 64);

b) calculating a checksum on said second mobile services switching center the checksum so as to include the said mobile station (fig. 3, col. 9 line 35 thru col. 11 line 65);

Art Unit: 2683

c) sending a home location register checksum to said second mobile services switching center from a home location register (fig. 10b, col. 10 lines 13-35, and col. 16 line 66 thru col. 17 line 58);

d) comparing said home location register authentication and said second mobile services switching center authentication (col. 10 lines 13-35, col. 16 line 66 thru col. 17 line 58); and

e) if said home location register checksum and said second mobile services switching center checksum are equal, sending (transmit) a location registration signal from said second mobile services switching center to said mobile station (col. 1 line 46 thru col. 2 line 26, col. 5 line 54 thru col. 6 line 33, and col. 16 line 66 thru col. 17 line 58).

However, Chan does not specifically disclose calculating checksum and comparing checksum.

Fox teaches a method for calculating checksum and comparing checksum (fig. 5-8, col. 1 line 65 thru col. 2 line 35, and col. 5 line 30 thru col. 8 line 37). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Chan et al. system with the teaching of Fox of comparing and calculating checksum to make sure the integrity of the databases.

Regarding claim 6, Chan et al. discloses a system for updating location information of a mobile station when said mobile station has moved from an area controlled by a first mobile services switching center to an area controlled by a second

Art Unit: 2683

mobile services switching center (fig. 1-3, col. 5 line 54 thru col. 6 line 33), said method comprising:

- a) means for adding information relating to said mobile station to a second mobile services switching center database in response to said mobile station registering with said second mobile services switching center (fig. 1-3, col. 12 lines 32- 64);
- b) means for calculating a checksum on said second mobile services switching center database (fig. 3, col. 10 lines 5-63);
- c) means for sending a home location register checksum to said second mobile services switching center to said mobile station from a home location (fig. 3, col. 5 line 54 thru col. 6 line 33, col. 10 lines 13-35, and col. 16 line 66 thru col. 17 line 58);
- d) means for comparing said home location register authentication and said second mobile services switching center authentication (col. 10 lines 13-35, col. 16 line 66 thru col. 17 line 58); and
- e) means for sending a location registration signal from said second mobile services switching center to said mobile station register if said home location register checksum and said second mobile services switching center checksum are equal (col. 1 line 46 thru col. 2 line 26, and col. 16 line 66 thru col. 17 line 58). However, Chan does not specifically disclose calculating checksum and comparing checksum.

Fox teaches a method for calculating checksum and comparing checksum (fig. 5-8, col. 1 line 65 thru col. 2 line 35, and col. 5 line 30 thru col. 8 line 37). Therefore, it

Art Unit: 2683

would have been obvious to one skilled in the art at the time the invention was made to modify Chan et al. system with the teaching of Fox of comparing and calculating checksum to make sure the integrity of the databases.

3. Claims 2, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al (5,970,144) in view of Fox (5,765,172) as applied to claim 1 above, and further in view of Antic et al. (5,594,942).

Regarding claim 2, in the modify Chan et al. system, Chan et al. further discloses the method as recited in claim 1, wherein said step of comparing said home location register checksum and said second mobile services switching center checksum (fig. 5-8, col. 1 line 65 thru col. 2 line 35, and col. 5 line 30 thru col. 8 line 37) further comprises the additional steps of:

a) sending an error signal (transmits a registration notifications response signal of passed or failed) from said second mobile services switching center to said home location register when said home location register checksum and said second mobile services switching center checksum are not equal (fig. 10-11, col. 10 line 13-35, and col. 16 line 66 thru col. 17 line 58);

b) setting (store) said second mobile services switching center database equal to a previous correct database when said home location register checksum and said second mobile services switching center checksum are not equal (col. 10 lines 13-35, and col. 11 lines 28-65);

c) sending (transmit) authentication information from home location register to said second mobile service switching center to compare and update until the value is match (col. 10, line 13 thru col. 11 line 65). However, Chan does not specifically disclose sending all logged mobile stations that have been erased from said home location register to said second mobile services switching center after receiving said error signal at said home location register from said second mobile services switching center; and subtracting each erased mobile station and adding each newly registered mobile station identities to said previous correct database; appropriately adding and subtracting each of said mobile station identities until said home location register checksum and said second mobile services switching center checksum are equal.

Antic et al. teaches HLR unit restart transmit a message indicating unreliable position data to all mobile service switching centers connected thereto, which means Home Location Register (HLR) is also sending all logged mobile stations that have been erased from said home location register to said second mobile services switching center after receiving said error signal at said home location register from said second mobile services switching center; and subtracting each erased mobile station and adding each newly registered mobile station identities to said previous correct database; appropriately adding and subtracting each of said mobile station identities until said home location register checksum and said second mobile services switching center checksum are equal (fig. 1-5, col. 1 line 57 thru col. 2 line 4, and col. 3 line 12 thru col. 7 line 35). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Chan et al. system with the teaching of Antic et al

sending all logged, subtracting each erased, adding each newly register mobile station identities in comparing record of registering between Home Location Register (HLR) and Mobile Service Switching Center (MSCs) in order to make sure the integrity and reliability of the databases.

Regarding claim 7, in the modify Chan et al. system, Chan et al. further discloses the system as recited in claim 6, wherein said step of comparing said home location register checksum and said second mobile services switching center checksum (fig. 5-8, col. 1 line 65 thru col. 2 line 35, and col. 5 line 30 thru col. 8 line 37) further comprises the additional steps of:

- a) sending an error signal (transmits a registration notifications response signal of passed or failed) from said second mobile services switching center to said home location register when said home location register checksum and said second mobile services switching center checksum are not equal (fig. 10-11, col. 10 line 13-35, and col. 16 line 66 thru col. 17 line 58);
- b) setting (store) said second mobile services switching center database equal to a previous correct database when said home location register checksum and said second mobile services switching center checksum are not equal (col. 10 lines 13-35, and col. 11 lines 28-65);
- c) sending (transmit) authentication information from home location register to said second mobile service switching center to compare and update until the value is match (col. 10 line 13 thru col. 11 line 65). However, Chan does not specifically disclose

Art Unit: 2683

sending all logged mobile stations that have been erased from said home location register to said second mobile services switching center after receiving said error signal at said home location register from said second mobile services switching center; and subtracting each erased mobile station and adding each newly registered mobile station identities to said previous correct database; appropriately adding and subtracting each of said mobile station identities until said home location register checksum and said second mobile services switching center checksum are equal.

Antic et al. teaches HLR unit restart transmit a message indicating unreliable position data to all mobile service switching centers connected thereto, which means Home Location Register (HLR) is also sending all logged mobile stations that have been erased from said home location register to said second mobile services switching center after receiving said error signal at said home location register from said second mobile services switching center; and subtracting each erased mobile station and adding each newly registered mobile station identities to said previous correct database; appropriately adding and subtracting each of said mobile station identities until said home location register checksum and said second mobile services switching center checksum are equal (fig. 1-5, col. 1 line 57 thru col. 2 line 4, and col. 3 line 12 thru col. 7 line 35). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Chan et al. system with the teaching of Antic et al sending all logged, subtracting each erased, adding each newly register mobile station identities in comparing record of registering between Home Location Register (HLR)

Art Unit: 2683

and Mobile Service Switching Center (MSCs) in order to make sure the integrity and reliability of the databases.

Allowable Subject Matter

4. Claims 3-4 are allowed.

The following is an examiner's statement of reasons for allowance:

5. Regarding claims 3 and 4, The Chan et al. reference discloses a method in an first mobile services switching center for updating location information of a mobile station, said method comprising: sending a home location register checksum from a home location register to said first mobile services switching center (fig. 1-3, col. 10 lines 13-62, and col. 5 line 54 thru col. 6 line 33).

This reference does not specifically disclose a method of subtracting said mobile station from a first mobile services switching center database; recalculating a first mobile services switching center checksum to account for the subtracted mobile station; sending an erasure acknowledge signal from said first mobile services switching center to said home location register; and comparing said first mobile services switching center checksum to said home location register checksum. And the step of comparing said first mobile services switching center checksum to said home location register checksum further comprises the additional steps of: sending a negative acknowledge signal from said first mobile services switching center to said home location register when said home location register checksum and said first mobile services switching center

Art Unit: 2683

checksum are not equal; setting said first mobile services switching center database equal to a previous correct database when said home location register checksum and said first mobile services switching center checksum are not equal; sending all logged mobile stations that have been erased from said home location register to said first mobile services switching center after receiving said error signal at said home location register from said first mobile services switching center; subtracting each erased mobile station and adding each newly registered mobile station to said previous correct database; appropriately adding and subtracting each of said mobile stations until said home location register checksum and said first mobile services switching center checksum are equal; erasing the mobile stations that are resent in said logged erasures; and stopping said sending of a negative acknowledge signal from said first mobile services switching center to said home location register when said first mobile services switching center checksum and said home location register checksum are equal.

Response to Amendment

6. Applicant's arguments filed 02/09/2004 have been fully considered but they are not persuasive.

Respond to the argument relate to Chan et al. and Fox failing to disclose or teach a method and a system for updating location information of a mobile station when said mobile station has moved from an area controlled by a first mobile services switching

center to and area controlled by a second mobile services switching center comprising the process of:

- 1) Calculating a checksum on a database associated with a mobile services switching center for a geographical region in which a mobile station is currently located.
- 2) the transmission of a home location register checksum to that mobile services switching center from home location register.
- 3) comparing those checksums.
- 4) if checksums are equal, sending a location registration signal to the mobile station.
- 5) Fox failing to disclose or teach the method for calculating checksum and comparing checksum.
- 6) Fox does not mention wireless telecommunications systems.

After carefully review Chan et al. and Fox reference cited, the examiner disagreed because of the following reason:

The Chan et al. reference discloses when the mobile station is roaming and registering with the Mobile Switching Center of Visitor Location Register (MSC/VLR) (fig. 1-3, col. 1 line 46 thru col. 2 line 26, col. 10 line 63 thru col. 12 line 64).

- 1) Calculating a checksum (information related to mobile by checksum) on a database associated with a mobile services switching center for a geographical region

in which a mobile station is currently located (fig. 1-10b, col. 1 line 46 thru col. 2 line 26, and col. 10 line 5 thru col. 12 line 64).

2) the transmission of a home location register checksum to that mobile services switching center from home location register (col. 1 line 46 thru col. 2 line 26, col. 5 line 54 thru col. 6 line 33, and col. 10 lines 5-62).

3) comparing those checksums (fig. 10, (col. 1 line 46 thru col. 2 line 26, col. 5 line 54 thru col. 6 line 33, and col. 14 line 63 thru col. 16 line 65).

4) if checksums are equal, sending a location registration signal to the mobile station (col. 1 line 46 thru col. 2 line 26).

As the Applicant notes, Chan actually disclosed and taught calculating and comparing checksum that meet the limitations as per applicant claiming. However, the examiner used the Fox reference to clarify the Chan reference about the calculating and comparing the checksum between the two databases in communication.

5) Fox discloses or teaches the method for calculating checksum and comparing checksum to keep the integrity of databases (abstract, col. 1 line 65 thru col. 1 line 47).

6) Fox mentions about wireless communication systems (satellite system, and microwave system) (#24 fig. 1).

Conclusion

Art Unit: 2683

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

703 308-9051, (for formal communication intended for entry)

Or:

(703) 305-9509 (for informal or draft communications, please label

"PROPOSED" OR "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA. Sixth floor (Receptionist).

Art Unit: 2683

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D Nguyen whose telephone number is (703) 605-1301. The examiner can normally be reached on 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Joseph Nguyen



Mar. 27, 2004



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600